CLAIMS

1. A method of simulating an area of interest (AOI) on a mask, the method comprising:

identifying the AOI;

generating an inspection image of the AOI;

providing design geometry information regarding an area outside the AOI without use of inspection images; and

performing a simulation of the AOI based on the inspection image and the design geometry information.

2. The method of Claim 1, wherein providing design geometry information includes modifying data representing an area surrounding the AOI.

3. The method of Claim 2, wherein modifying data includes generating a virtual image of the area outside the AOI and combining the inspection image and the virtual image.

4. The method of Claim 3, wherein performing the simulation includes receiving the combined images.

5. The method of Claim 2, wherein modifying data includes generating a virtual image of the area outside the AOI and performing the simulation includes receiving the inspection image and the virtual image.

6. The method of Claim 5, wherein performing the wafer simulation further includes combining the inspection image and the virtual image.

7. The method of Claim 1, wherein providing design geometry information includes accessing at least one of a GDS-II file, a MEBES file, and a bit map.

8. The method of Claim 1, wherein providing design geometry information includes extending geometries of a feature in the AOI.

9. The method of Claim 1, wherein providing design geometry information includes accessing information regarding another mask.

10. The method of Claim 9, wherein providing design geometry information includes accessing information regarding at least one of a trim mask and a phase shifting mask.

11. Data for a simulation engine, the data comprising:

first information from an inspection tool, the first information relating to a first area; and

second information from a design file, the second information relating to a second area outside the first area.

12. The data of Claim 11, wherein the design file includes at least one of a GDS-II file, a MEBES file, and a bit map.

13. The data of Claim 11, wherein the second area is defined by at least one predetermined distance from a perimeter of the first area.

14. The data of Claim 11, wherein the second area is defined by a plurality of distances from a perimeter of the first area.

15. The data of Claim 11, wherein the first area is user defined.

16. The data of Claim 11, wherein the first and second areas are system defined.

17. The data of Claim 11, wherein the first area relates to a first mask and the second area relates to a second mask associated with the first mask.

18. A system for simulating a defect on a mask, the system comprising:

means for identifying an area of interest (AOI) including the defect;

means for providing an inspection image of the AOI;

means for providing design geometry information regarding an area surrounding the AOI; and

means for performing a simulation of the AOI based on the inspection image and the design geometry information.

19. The system of Claim 18, wherein the means for providing design geometry information includes means for modifying data representing an area surrounding the AOI.

20. The system of Claim 19, wherein the means for modifying data includes means for generating a virtual image of the area surrounding the AOI and combining the inspection image and the virtual image.

21. The system of Claim 19, wherein the means for modifying data includes means for generating a virtual image of the area

surrounding the AOI and the means for performing the simulation includes means for receiving the inspection image and the virtual image.

22. The system of Claim 18, wherein the means for providing design geometry information includes at least one of a GDS-II file, a MEBES file, and a bit map.

23. The system of Claim 18, wherein the means for providing design geometry information includes means for extending at least one geometry of a feature in the AOI to a predetermined distance.

24. The system of Claim 18, wherein the means for providing design geometry information includes means for accessing database information regarding another mask.

25. A simulated image of an area of interest on a wafer, the simulated image comprising:

a feature, wherein the feature has an accuracy based on a mask inspection image having a defined area and design geometry information outside the defined area.

26. A method of improving simulation accuracy for an area of interest on a mask, the method comprising:

generating a mask inspection image having a defined area, wherein simulating the mask inspection image provides a first accuracy; and

combining the mask inspection image with design geometry information outside the defined area to create a composite image, wherein simulating the composite image provides an improved accuracy compared to the first accuracy.

27. A computer program product for simulating an area of interest (AOI) on a mask, the computer program product comprising:

a first set of instructions for receiving inspection information regarding the AOI;

a second set of instructions for receiving design geometry information regarding an area outside the AOI; and

a third set of instructions for performing a simulation of the AOI based on the inspection information and the design geometry information.